Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARTHUR N. BORG

Appeal No. 1997-2774
Application No. 08/080,471

ON BRIEF

Before THOMAS, JERRY SMITH, and GROSS, Administrative Patent Judges.

GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 14, 16 through 22, 24 through 34, and 36 through 44, which are all of the claims pending in this application. Claims 15, 23, and 35 have been canceled.

Appellant's invention relates to a security system which provides a visual record of trespassers that approach the entryway to a building. When a detector senses a change in a scene, such as at the entrance to a building, power is

supplied to a camera to capture an image of the scene, a portion of the analog signal is converted to digital, and the image is transmitted to a display at a remote location, such as a control station. Claim 44 is illustrative of the claimed invention, and it reads as follows:

44. A process for capturing a scene comprising the steps:

detecting a change in a scene, a scene being a visual perception of objects contained in a predetermined solid angle;

converting the scene in which a change is detected into an analog electrical signal from which a replica of the original scene can be obtained; and

converting a portion of the analog electrical signal into a sequence of digital samples representative of a portion of a single image of the scene, the remaining portions of the analog electrical signal not being used.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Barber et al. (Barber)	4,361,730	Nov. 30, 1982
Coutta et al. (Coutta)	4,510,526	Apr. 09, 1985
Yoshida	4,566,123	Jan. 21, 1986
Beaulier	4,568,981	Feb. 04, 1986
Keesen et al. (Keesen)	4,807,033	Feb. 21, 1989

Onoe et al. (Onoe)	5,151,693	Sep. 29, 1992
Tanaka	5,382,943	Jan. 17, 1995

John D. Spragins et al., "Telecommunications: Protocols and Design", Addison-Wesley Publishing Company (1991), pp. 226-9. (Spragins)

The Radio Amateur's Handbook, 49th Edition, by the Headquarters Staff of the American Radio Relay League (1972), p. 635. (Handbook)

Claims 28, 30, 33, and 37 stand rejected under 35 U.S.C. § 112, first paragraph, as being single means claims that are non-enabled by the disclosure.

Claims 1 through 14, 16 through 22, 24 through 34, and 36 through 44 stand rejected under 35 U.S.C. § 103 as being unpatentable. As evidence of obviousness, the examiner applies Beaulier and Coutta as to claims 4 and 5 and Tanaka alone as to claims 2, 6, 9, 43, and 44. For the remaining claims, the examiner applies Tanaka in combination with: Yoshida as to claims 1, 8, 27, and 28, Barber as to claims 3, 10, 29, 30, 36, and 37, Keesen as to claim 7, Onoe as to claim 11, Onoe and Spragins as to claim 12, Onoe and Handbook as to claim 13, Coutta as to claims 14, 16, and 34, Coutta and Barber as to claims 17 and 31 through 33, Coutta and Beaulier

as to claims 18, 19, 38, and 39, Coutta and Onoe as to claims 20 through 22, 24, and 40 through 42, Coutta, Onoe, and Spragins as to claim 25, and Coutta, Onoe, and Handbook as to claim 26.

Reference is made to the Examiner's Answer (Paper No. 16, mailed January 16, 1997) for the examiner's complete reasoning in support of the rejections, and to appellant's Brief (Paper No. 15, filed August 21, 1996) for appellant's arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellant and the examiner. As a consequence of our review, we affirm the enablement rejection of claims 28, 30, 33, and 37 and reverse the obviousness rejections of claims 1 through 14, 16 through 22, 24 through 34, and 36 through 44. In other words, we affirm-in-part. We also enter a new ground of rejection using our authority under 37 CFR § 1.196(b).

As to the enablement rejection, the examiner asserts (Final Rejection, page 2) that "claims 28, 30, 33, and 37 are considered to be a [sic] single means claim[s]." Appellant

contests the rejection, stating that since the claims depend from method claims having multiple steps, each claim must be interpreted as an apparatus including a "means for" accomplishing each recited step. With such an interpretation, the claims would include multiple means. Appellant further refers to section 806.05(e) of the Manual of Patent Examining Procedure (MPEP) as providing approval for such a claim format. We agree with the examiner.

According to the MPEP, § 2164.08(a), a single means claim is defined as a claim in which "a means recitation does not appear in combination with another recited element of means," and "is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph." The MPEP refers to In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983), wherein the court explained,

> The long-recognized problem with a single means claim is that it covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor. See O'Reilly v. Morse, 56 U.S. 62, 112 (1853). Thus, the claim is properly rejected for what used to be known as "undue breadth," but has since been appreciated as being, more accurately, based on the first paragraph of §112... .
>
> The final paragraph of §112 saves *combination* claims drafted using means-plus-function format from

> this problem by providing a construction of that format narrow enough to avoid the problem of undue breadth as forbidden by the first paragraph. But no provision saves a claim drafted in means-plus-function format which is not drawn to a combination, i.e., a single means claim.

In the present case, although claims 28, 30, 33, and 37 do not recite even a single means, they are analogous to single means claims in that they recite neither a specific structure nor a combination of means. In the absence of any recitation of structure or multiple means, claims 28, 30, 33, and 37 are not drawn to a combination. Thus the claims appear to cover "every conceivable means for achieving the stated" method, whereas the specification discloses only those limited means or elements known to the inventor. As to appellant's proposed interpretation of claims 28, 30, 33, and 37, no means is recited, and the structure required for each method need not be claimed in terms of means-plus-function. Instead, some or all of the structure required to perform the method alternatively could be recited as one or more specific elements. In fact, apparatus claim 1, which basically corresponds to method claim 27, is a hybrid type claim which recites a camera (a specific element) for accomplishing the

step of converting the scene into analog and a "means for" accomplishing each other step recited in the method. Consequently, we agree with the examiner that the scope of claims 28, 30, 33, and 37 is not enabled by the specification, and we sustain the examiner's rejection under 35 U.S.C. § 112, first paragraph.[1]

Claims 2, 6, 9, 43, and 44 were rejected as being unpatentable over Tanaka. Claim 6 includes, in pertinent part, "a means for capturing a single image of a scene" and "a memory for storing the sequence of integers representing the captured scene." As to the capturing means, appellant invokes In re Donaldson Co., 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994), and analyzes the claim in accordance therewith.[2] In other words, appellant specifically lists the elements disclosed which correspond to the claimed means and indicates that elements lacking counterparts in Tanaka include microprocessor 15, sync separator 29, gate 31, D flip-flop 35,

[1] We should note that the section of the MPEP referenced by appellant relates to restriction practice and not to the single means rejection. Accordingly, that section does not control our decision concerning the single means issue.

[2] An analysis of means-plus-function elements according to In re Donaldson Co. will hereafter be referred to as a Donaldson analysis.

NAND gates 37, 39, and counter 41. The examiner responds (Answer, page 10) that "Tanaka would inherently contain a microprocessor and counter or equivalent elements because it is performing the same function."

The sixth paragraph of 35 U.S.C. § 112 states that a claim expressed as a means for performing a specified function without reciting a structure or material will be construed to cover the corresponding structure or material described in the specification and its equivalents. The test for determining equivalence under the sixth paragraph of section 112 is whether the differences with respect to the structure disclosed in the specification are insubstantial, yet the function is identical. See, for example, Al-Site Corp. v. VSI International Inc., 174 F.3d 1308, 1316, 50 USPQ2d 1161, 1165 and 1168 (Fed. Cir. 1999). The examiner has failed to indicate any particular elements in Tanaka that correspond to the very specific ones disclosed by appellant and listed in the Brief for the capturing means. Consequently, we find that Tanaka does not disclose a structure with insubstantial differences from, or, rather, an equivalent structure within

35 U.S.C. § 112, sixth paragraph, to that disclosed for the capturing means.

Furthermore, regarding the memory, appellant argues (Brief, page 37) that Tanaka neither discloses a memory nor requires a memory, since the digitized television signal is immediately transmitted to another location. The examiner, on the other hand, contends (Answer, page 11) that memory devices are well-known in the art for temporarily storing information to be processed and "would normally be an inherent feature." Although the examiner's rationale for including a memory is reasonable, it appears to be based on mere conjecture, as the inclusion of a memory is not suggested by the reference. In re Warner, 154 USPQ 173, 177 (CCPA 1967). Accordingly, the examiner has failed to establish a prima facie case of obviousness, and we cannot sustain the rejection of claim 6.

Claims 9, 43, and 44 each recite a means for or step of converting a portion of the image viewed by the television camera into a sequence of integers, with "the remaining portions of the analog electrical signal not being used." Appellant (Brief, pages 45-6) points to A/D converter 25, microprocessor 15, sync separator 29, gate 31, D flip-flop 35,

NAND gates 37 and 39, and counter 41 in the specification as corresponding to the claimed means of claims 9 and 43. These elements are the same as those for which we found above no equivalent in Tanaka. Further, nothing in Tanaka indicates that only a portion of the signal is converted, with the rest of the signal not being used, as is required by all three claims. Consequently, we reverse the rejection of claims 9, 43, and 44.

Claim 2 includes a "means for saving power, said power saving means supplying power to the scene converting means only ... until the sequence of digital samples representative of a portion of a single image of the scene has been obtained." Although the scene converting means must be turned off eventually, Tanaka, as pointed out by appellant (Brief, page 49), does not indicate how or when his devices are turned off once they are turned on. The examiner asserts (Final Rejection, page 7) that it would have been obvious to apply power only during the conversion of the signal from analog to digital, "since power during any other time would not be necessary thereby conserving power." The examiner then contends (Answer, page 11) that Tanaka "contains equivalent

elements because the reference performs the same function as claimed."

We find no suggestion in Tanaka that the same function is performed, as Tanaka makes no mention of turning off the various devices, and, thus, we find no such equivalent elements. Further, as to the obviousness of limiting the time during which power is supplied, the prior art completely lacks a teaching or suggestion as to how and why to do so. Therefore, we cannot sustain the rejection of claim 2.

Claims 7, 8, and 10 through 13 all depend from claim 6, and therefore include the same limitations noted above as lacking from Tanaka. The examiner combines Tanaka with Keesen (for claim 7), Yoshida (for claim 8), Barber (for claim 10), Onoe (for claim 11), Onoe and Spragins (for claim 12), and Onoe and Handbook (for claim 13), but none of the additional references cures the deficiencies of Tanaka detailed above in the discussion of the rejection of claim 6. Consequently, we cannot sustain the rejections of claims 7, 8, and 10 through 13.

Claims 1, 27, and 28 include a means for or step of converting a portion of the signal and discarding the

remainder of the signal, similar to claims 9, 43, and 44. Although the examiner combines Tanaka with Yoshida to reject claims 1, 27, and 28, Yoshida fails to overcome the above-noted deficiency of Tanaka. Therefore, we must reverse the rejection of claims 1, 27, and 28.

Regarding claims 3, 29, and 30, the examiner (Final Rejection, page 8) names as a means for detecting a first event Tanaka's sensor 4, but admits that Tanaka fails to disclose the claimed second event. The examiner contends, however, that

> every security system should include an on/off switch for turning off the system when it is not needed. Therefore, if the second event (turning the system off) does not occur, then the security system would continue to operate. Therefore, it would have been obvious to one skilled in the art to modify Tanaka to have an on/off switch to turn off the system when it is not needed.

The examiner further applies Barber for a teaching of a delay for sending the alarm code to a remote location.

As argued by appellant (Brief, page 62), if the second event is assumed to be turning off the system, as proposed by the examiner, then the "means for identifying a first event that occurs ... after" the second event occurs would have no

power when it is supposed to be performing its function of identifying the first event. Barber does not remedy this defect. Furthermore, in accordance with appellant's Donaldson analysis (Brief, page 63), we find that the examiner's on/off switch is not equivalent to the disclosed indicators of second events and therefore fails to meet the claimed "means for identifying." The examiner's only response in the answer (page 13) is that "[t]he references show equivalent elements performing the same functions as claimed." However, as illustrated by appellant, the elements of the references do not perform the same function, and, thus, the references do not show equivalent elements. Therefore, we cannot sustain the rejection of claims 3, 29, and 30.

Claim 4 recites, in pertinent part, "a means for augmenting the received digital samples with a plurality of augmenting digital samples representing augmenting data whereby the resulting sequence of digital samples can be converted to an electrical signal." The examiner states (Final Rejection, page 9) that Beaulier discloses "a means (32,34,50,52) for augmenting the received digital samples (background frame which is the digital data of the scene) with

a plurality of augmenting digital samples representing augmenting data (caption frame) whereby the resulting sequence of digital samples (col. 5, lines 17-21) can be converted to an electrical signal." The examiner combines Coutta with Beaulier for a suggestion to use time data for the caption frame.

Appellant argues (Brief, page 65) that Beaulier mixes the background and caption images to form a composite image, whereas appellant keeps the two sets of data distinct for separate display. Appellant further explains, as part of a Donaldson analysis (Brief, pages 66-7), that his means for augmenting the data involves a separate conversion of the time data and the scene data into separate arrays of integers stored in adjacent regions of the same memory. Appellant discloses (Specification, page 13, lines 6-7) that the serial bit stream representing the image is "augmented at the end by digital codes that specify the date and time of arrival." In contradistinction to appellant's method, Beaulier supplies both background and caption data to a keyer 52 which "mixes the background and caption images to generate video data defining a composite image frame which is communicated to

background frame store 34" (see column 5, lines 17-20). Beaulier further reveals (column 5, lines 43-48) that keyer 52 is used "to mix the [background] image [from background frame store 34] with a caption stored by caption frame store 32, and then to return the single still frame composite mixed image to background frame store 34."

The examiner insists (Answer, page 13) that Beaulier's keyer 52, which mixes the two types of data, "reads on ... 'a means for augmenting ....'" However, keyer 52 does not have the same function as the disclosed elements for appellant's claimed means, as required by In re Donaldson Co., as it mixes the image and caption data to form a new composite image rather than augmenting, or adding to, the digital image data wherein the two types of data remain distinct. Furthermore, Coutta fails to cure Beaulier's deficiency, since Coutta discloses (column 4, lines 47-52) combining the camera output (which is an analog signal) and the date/time generator output using a video mixer, and there is no evidence of record that combining analog video signals has corresponding structure to that used for processing digital signals. Thus, neither reference suggests any structure which could be construed as

equivalent to appellant's disclosed "means for augmenting the received digital samples." Accordingly, we cannot sustain the rejection of claim 4 and its dependent, claim 5.

Claim 31 is the method equivalent of claim 4. Thus, claim 31 includes a step of "augmenting the received digital samples with a plurality of digital samples representing augmenting data whereby the resulting sequence of digital samples can be converted to an electrical signal." The examiner combines Tanaka, Coutta, and Beaulier to reject the claim. Tanaka does not disclose any augmenting data of any sort. Thus, the examiner relies on Coutta and Beaulier for the augmentation step. As indicated above, neither Coutta nor Beaulier teaches augmenting digital samples as claimed. Therefore, we cannot sustain the rejection of claim 31 and its dependents, claims 32 and 33.

Claim 14 includes a means for generating an electrical signal from the sequence of integers representing the scene and the time at which the sequence was received. Although the rejection involves Tanaka and Coutta, as indicated above, Tanaka does not disclose any time data. Thus, the rejection

relies only upon Coutta for the last means of claim 14 (the means for generating the electrical signal). Appellant (Brief, pages 84-6) engages in a Donaldson analysis for the claimed means in which he points out that the video mixer of Coutta generates a signal from two analog signals, which differs from appellant's generation of a signal from two digital signals. Further, appellant clearly discloses that the serial bit stream representing the image is "augmented at the end by digital codes that specify the date and time of arrival," which differs from a mixture of analog signals. Thus, as both the methods of generating a signal and the signal generated differ, we find the "means" for generating the signal likewise is not an equivalent under 35 U.S.C. § 112, sixth paragraph. Consequently, we reverse the rejection of claim 14.

Also, claims 16 through 22 and 24 through 26 all depend from claim 14 and thus include the same limitation found lacking from Tanaka and Coutta. Further, none of the additional references used in the rejections of these claims cure the deficiencies of Tanaka and Coutta. Accordingly, we

reverse the rejection of claims 16 through 22 and 24 through 26.

Claim 34 is the method equivalent of claim 14 and thus includes a step of generating a signal which corresponds to the means recited at the end of claim 14. We have already determined that appellant's generation of an electrical signal from a sequence of integers representing the image and the time at which the sequence was received differs from Coutta's video mixing of two analog signals representing the image and the time, respectively. Therefore, we cannot sustain the rejection of claim 34.

Claims 36 through 42 all depend from claim 34 and thus include the same method step lacking from Tanaka and Coutta. Since none of the additional references applied against these dependent claims overcome the above-noted deficiency, we cannot sustain the rejection of claims 36 through 42.

We make the following new ground of rejection under 37 CFR § 1.196(b). Claims 28, 30, 33, 37, and 43 are rejected under 35 U.S.C. § 112, second paragraph as being vague and indefinite.

As stated in In re Borkowski, 422 F.2d 904, 909, 164 USPQ 642, 645-46 (CCPA 1970), and reproduced in In re Hyatt, 708 F.2d at 715, 218 USPQ at 197 (footnotes omitted):

> The first sentence of the second paragraph of §112 is essentially a requirement for *precision and definiteness* of claim language. If the scope of subject matter embraced by a claim is clear, and if the applicant has not otherwise indicated that he intends the claim to be of a different scope, then the claim does particularly point out and distinctly claim the subject matter which the applicant regards as his invention.

This suggests that if the scope of a claim is not clear, then a rejection under the second paragraph of 35 U.S.C. § 112 is proper. We have sustained the rejection under the first paragraph of 35 U.S.C. § 112, as the disclosure is not commensurate in scope with the subject matter we believe to be encompassed by the claims. However, we also find the scope of the claims to be unclear in that we are unable to determine the metes and bounds of the claims from the language thereof.

The purpose of the second paragraph of § 112 is to basically insure, with a reasonable degree of particularity, an adequate notification of the metes and bounds of what is being claimed. See In re Hammack, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970). When viewed in light of this

authority, since no structure is explicitly recited, the language of the claims does not insure with any degree of particularity an adequate notification of the metes and bounds. More specifically, it is unclear whether the claims are to be interpreted as combination claims including a means for accomplishing each step, as asserted by appellant, or whether the claims are to encompass all structures capable of accomplishing the steps of the methods from which they depend. Accordingly, claims 28, 30, 33, and 37 are vague and indefinite as well as non-enabled by the disclosure.

Also, in line 7 of claim 43, both "the scene captured" and "the television camera" lack antecedent basis in the claim, as there is no prior indication in the claim that a scene is captured nor is there any prior recitation of a television camera. Accordingly, claim 43 is vague and indefinite.

CONCLUSION

In summary, the decision of the examiner rejecting claims 28, 30, 33, and 37 under 35 U.S.C. § 112, first paragraph is affirmed, and the decision of the examiner rejecting claims 1 through 14, 16 through 22, 24 through 34, and 36 through 44

under 35 U.S.C. § 103 is reversed. Accordingly, the decision of the examiner rejecting claims 1 through 14, 16 through 22, 24 through 34, and 36 through 44 is affirmed-in-part. A new ground of rejection of claims 28, 30, 33, 37, and 43 under 35 U.S.C. § 112, second paragraph has been added pursuant to provisions of 37 CFR § 1.196(b).

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

> (b) Appellants may file a single request for rehearing within two months from the date of the original decision . . . .

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new

ground of rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

> (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .
>
> (2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellants elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for reconsideration thereof.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART
37 CFR § 1.196(b)

JAMES D. THOMAS Administrative Patent Judge	)	
JERRY SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)	

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